



Beachgoers enjoying a day at South Cape Beach. (See Appendix G for photo information.)

SECTION 4. SOUTH CAPE BEACH STATE PARK

4.1. INTRODUCTION

South Cape Beach State Park is located in Mashpee, along the southeast shore of Waquoit Bay. (Figure 4.1) Its most famous features are a series of low dunes and an adjacent white sand beach that extend from the channel entrance of Waquoit Bay, eastward to the south shore of Flax Pond.

South Cape Beach is a seasonally-staffed park that draws thousands of summer visitors who seek it out for the relatively warm and calm waters of Nantucket Sound. However, there is much more to the park than the beach and dunes. It also includes extensive salt marshes, brackish ponds, the shores of Waquoit Bay and Great River, and pitch pine and oak forests typical of coastal Cape Cod. Often overlooked by beachgoers, these forests are enjoyed by a variety of recreationists, including hikers, bird watchers, and hunters.

Within the boundaries of the state park is a 15.9 acre municipal park called Mashpee Town Beach. During the summer, it is operated by the town of Mashpee for exclusive use by residents. In the off-season, when the DCR parking lot is gated, it provides parking for all visitors.

Initial efforts to establish a state beach in Mashpee were contentious. In 1958 the legislature authorized the Commissioner of Public Works, the agency then responsible for state beaches, to acquire South Cape Beach for the purpose of creating and maintaining a state reservation. (Chapter 647 of the Acts of 1958) Initial acquisitions were followed by litigation, which in turn was followed by authorization from the legislature for the “reconveyance” of parcels to their original owners. (Chapter 635 of the Acts of 1962) It wasn’t until the early 1970s that acquisition efforts began anew. This time, Mashpee municipal lands were specifically excluded from acquisition, and the Mashpee Select Board had approval of all acquisitions. The Town and the Commonwealth now enjoy a productive working relationship.

The interests of the town and Commonwealth remain inextricably linked. South Cape Beach is one of the few state parks in the DCR system with a mandated advisory committee; one largely comprised of representation from Mashpee. In addition, the park’s operations are governed by a 1981 agreement between the town and Commonwealth.

South Cape Beach State Park



South Cape Beach's physical, political, and regulatory attributes are summarized below. (Table 4.1.1)

Table 4.1.1. Physical, political and regulatory settings of South Cape Beach and Abigail's Brook.

Setting	Name or Metric
Location:	Mashpee
Area (acres)^a:	461.46
Perimeter (miles)^a:	9.59
Landscape Designation(s)^b:	Reserve, Parkland
Legislative Districts:	
House	Third Barnstable
Senate	Cape and Islands
Regulatory Designations:	Priority Habitat
	Waquoit Bay ACEC
	Outstanding Resource
	Waters – Waquoit Bay
	ACEC

- a. Calculated using a Geographic Information System (GIS).
b. For a summary of DCR's landscape designations, see <http://www.mass.gov/eea/docs/dcr/ld/ld-factsheet-final.pdf>.

Associated Properties. One additional property, the Abigail's Brook parcel, is included in this section. (See Figure 4.1 for the location of this property.)

- **Abigail's Brook.** This 35 acre property is located along the north shore of Abigail's Brook, on Hush Road in Mashpee. Access is from Great Oak Road, the same road used to access South Cape Beach.

South Cape Beach and the Abigail's Brook parcel are part of the Waquoit Bay National Estuarine Research Reserve. Other properties in the Reserve include WBNERR (Section 3), Washburn Island (Section 5), and Quashnet Woods and associated watershed lands (Section 6).

4.2. NATURAL RESOURCES

An Environmental Impact Report (EIR) was prepared for the park in 1990 (Albert Veri & Associates, Inc.). It remains the only document to comprehensively address the park's natural resources. Lists of common plant and animal species are included in that document.

Physical Features

South Cape Beach is located on the southeast shore of Waquoit Bay. Elevations range from sea level at the beach and salt marshes to approximately 20 feet above sea level to the north and east of Flat Pond. Most of the park is less than 10 feet above sea level. Elevations at the Abigail's Brook parcel range from sea level at the brook, to approximately 40 feet above sea level in the parcel's northeast corner. Elevations rise quickly as distance from the brook increases.

Water Resources

There are two major ponds: Sage Lot (i.e., Sedge Lot) Pond; and Flat Pond. The former is located entirely within the park and is connected, via a channel, to Waquoit Bay. The latter is located partially in the park and partially in the adjacent residential resort community of New Seabury. (Table 4.2.1) A tidal creek connects Flat Pond to Sage Lot Pond. A network of creeks drain water from brackish wetlands into salt marshes, and then into Waquoit Bay; not all have been mapped. The length of mapped rivers and streams is presented in Table 4.2.1.

Table 4.2.1. Water resources of South Cape Beach and Abigail's Brook.

Water Resource	Name or Metric
Watershed:	Cape Cod
Aquifer:	Cape Cod SSA
Lens	n/a
Rivers and Streams (miles)	0.24
Vernal Pools	
Certified (#)	0
Potential (#)	1
Wetlands (acres)	105.95
Lakes and Ponds (acres)	17.40

- a. Includes overlap with adjacent water bodies.

Its low elevations and coastal location make most of South Cape Beach susceptible to flooding, storm surge, and anticipated sea-level rise. (Table 4.2.2) The Abigail's Brook parcel is predicted to be minimally affected by flooding, inundation, and sea level rise. This is due to its elevation and distance from the open ocean.

Table 4.2.2. Potential impacts of flooding, hurricane inundation, and sea-level rise to South Cape Beach and Abigail's Brook.

Type of Impact	Acres	%
Flooding:		
100-year Storm	448.36	97.16
500-year Storm ^a	456.83	99.00
Hurricane Inundation:		
Category 1 Storm	357.90	77.56
Category 2 Storm ^b	420.19	91.06
Category 3 Storm ^b	437.62	94.83
Category 4 Storm ^b	440.01	95.35
Sea Level Rise	77.55	16.81

a. Cumulative value; includes 100-year storm impacts.

b. Cumulative value; includes impacts of all lower category storms.

A Category 1 hurricane would inundate virtually all park infrastructure including most of Great Oak, Wills Work, and McGregor roads; all parking areas; boardwalks; and the changing station. A category 2 storm would inundate nearly the entire dune system, as well as additional upland areas

A one-foot rise in sea-level is predicted to close the southern portion of Great Oak Road and the connector road from Great Oak Road to the Mashpee town beach. Other DCR infrastructure is predicted to be unaffected over the next 30–50 years.

Between 1846 and 2008 the shoreline of South Cape Beach has been retreating landward at an average rate of 1.4 feet per year (Maio et al. 2014). Continued acceleration in the rate of sea level rise, coupled with an increase in the intensity and frequency of extreme storms will likely lead to an increased rate of land loss (Maio et al. 2014). Local losses may be greater than those predicted by the IPCC RCP 8.5 model (Church et al. 2013), as presented in Table 4.2.2.

There are two barrier beaches, Ms-4 and Ms-5. The first lies immediately south of Flat Pond and includes portions of the New Seabury Golf Course. The second extends from the Mashpee town beach westward to the main channel into Waquoit Bay; it includes all of Dead Neck.



Predicted hurricane inundation of South Cape Beach. Areas predicted to be inundated by Category 1 storms are represented in light green; additional areas inundated by Category 2, 3, and 4 storms are represented in dark green, yellow, and red, respectively. Nearly all of the park's infrastructure is vulnerable to Category 1 or greater storms. (See Appendix G for photo information.)

Rare Species

State-listed Species. Five state-listed species are known from South Cape Beach; two are also federally listed. (Table 4.2.3)

One federally listed species not currently listed under MESA (i.e., the red knot) and one candidate for federal listing (i.e., the New England Cottontail) also occur at South Cape Beach. Small numbers of migratory red knots forage along the shoreline in August and September (www.ebird.org); New England Cottontails are present year-round.

Table 4.2.3. State-listed species of South Cape Beach and Abigail's Brook, as identified by the NHESP.^{a, b}

Species ^{a, b}	Type ^c	MESA ^d
Common tern	B	SC
Least tern	B	SC
Mattamuskeet panic grass	P	E
Piping plover ^e	B	T
Roseate tern ^f	B	E

a. Presented alphabetically, by common name.

b. Fact sheets are available at: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/ mesa-list/list-of-rare-species-in-massachusetts.html>.

c. Types of state-listed species include: B = Bird and P = Plant.

d. Status of species listed under the Massachusetts Endangered Species Act (MESA): E = Endangered, SC = Special Concern; and T = Threatened.

e. This species is also federally threatened.

f. This species is also federally endangered.

Priority Habitat

Approximately 99.03 acres (21.46%) of South Cape Beach and Abigail's Brook is Priority Habitat. This includes all of the shore and beach, most of barrier beach Ms-5, Flat Pond, Sage Lot Pond, and the waters of Waquoit Bay and Nantucket Sound.

Vegetation

There have been no comprehensive surveys of the vegetation of South Cape Beach. Common species are identified in Albert Veri and Associates, Inc. (1990).

Invasive Species. There have been no formal surveys; only one species of invasive plant is currently known from the park. (Table 4.2.4) The native, non-invasive sub-species of common reed

(i.e., *Phragmites australis* ssp. *americanus*) has also been recorded.

Table 4.2.4. Known invasive and likely invasive plants of South Cape Beach and Abigail's Brook.

Species ^a	Status ^b
Common reed	I

a. Presented alphabetically, by common name.

b. Plants are classified as being either Invasive (I) or Likely Invasive (L) according to MIPAG (2005).

Natural Communities

There have been no formal surveys of natural communities. However, some community types have been identified. (Table 4.2.5) Forest cover types have been classified and mapped for this property and for all others in the Reserve.

Table 4.2.5. Known natural communities of South Cape Beach and Abigail's Brook.

Community Type ^a	System ^b	State Rank ^c	Source ^d
Coastal Forest/Woodland	T	S3	1
Maritime Beach Strand	T	S3	2
Maritime Dune	T	S2	2
Maritime Shrubland	T	S3	2
Pitch Pine - Oak Forest ^e	T	S5	1
Salt Marsh	E	S3	1
Shrub Swamp	P	S5	1

a. Classified according to Swain and Kearsley (2011).

b. E = Estuarine, P = Palustrine, T = Terrestrial.

c. The NHESP ranks communities from most rare (S1) to the most common (S5).

d. Information contained in this table was obtained from the following sources:

1. Based on "Habitat Types of South Cape Beach State Park, Mashpee, Mass." in Albert Veri & Associates, Inc. (1990).
2. Incidentally observed by RMP Planner during site visit.

Forests

South Cape Beach is 52.63% forested; the Abigail's Brook property is almost entirely forested (99.41%). Two CFI plots, one on the edge of a saltmarsh and the other in a stand of pitch pine, do not provide representative data on the park's forests.

Erosion from a 2010 storm revealed 111 "subfossil" eastern red cedar stumps and a preserved peat outcrop (Maio et al. 2014). These stumps ranged in age from approximately 413 to 1239 YBP and

represent an ancient forest that once covered the back of the barrier beach. Portions of this ancient forest are visible in the intertidal area east of the guarded swimming area.

Wildlife

No formal surveys have been conducted. However, because the park is a birding hotspot, there is an extensive species list. As of March 2015, 184 species were listed on eBird (www.ebird.org) for the park. Many are sea, shore, and marsh birds attracted to the park's intertidal areas and shallow waters. Historic information on the park's mammals, reptiles, and amphibians may be found in Albert Veri and Associates, Inc. (1990).

4.3. CULTURAL RESOURCES

This section describes the known and potential cultural resource areas, including pre-Contact and post-Contact archaeological resources, and historic buildings, structures, and landscapes. An overview of significant events in the history of South Cape Beach State Park is presented in Table 4.3.1. Cultural resources information is presented in Table 4.3.2.

ARCHAEOLOGICAL RESOURCES

There are no recorded pre-Contact sites located in South Cape Beach. In the early 1980s the 435 acre South Cape Beach parcel was archaeologically surveyed for the then proposed parking lot. Subsurface testing failed to recover any cultural materials. The pre-Contact archaeological sensitivity in the immediate area is highest in the Popponesset Bay area, along the major wetland margins, including the kettle ponds, smaller streams, swamps and ponds considered dense resource procurement areas.

Sage Lot Pond. A fragment of a ship's hull is located in Sage Lot Pond. It has alternately been exposed and covered by sand and marsh vegetation. A preliminary inspection was conducted by the Massachusetts Board of Underwater Archaeology, but little is known about this vessel.

Abigail's Brook Area. Three pre-Contact sites are located just north of the Abigail's Brook parcel. One archaeological survey was conducted in the area (MHC Report# 999) *An Intensive Archaeological Investigation of the Bufflehead Bay Project* area, and an important Wampanoag home site was located and recorded. MACRIS # MAS.13, the "Alves House Site" dates to the 18th and 19th centuries. It is located off DCR-owned property.

Historic Resources

When DCR acquired the property it preserved the undeveloped natural landscape; one familiar to previous generations of Native and European occupants. English colonists settled in the Mashpee area in the 1650s and took control from the resident Native American population. The converted Christian Wampanoags in the area were granted a settlement area within the colony and allowed a degree of self governance. This became Massachusetts' largest reservation, and retained political independence until the late eighteenth century. The culture of the Wampanoags continues to maintain a strong presence in the area. While the area around Waquoit Bay developed around the fishing and cranberry cultivation industries throughout the eighteenth and nineteenth century, little remaining evidence remains of any major settlement or land use at the area that is now South Cape Beach.

Historic Landscapes

No historic landscapes have been identified at this facility.

Structures

The only historic structure identified the 1984/1985 Cultural Resources Evaluation Project is "Mrs. Hall's Cottage." This structure, which was located north of the mouth of Sage Lot Pond, is no longer standing.

Objects

No historic objects have been identified at this facility

4.3.1. Significant events in the history of South Cape Beach and Abigail's Brook.

Year(s)	Events
1958	The Commissioner of Public Works is authorized to acquire "the whole or any portion of the properties comprising South Cape Beach...together with marshlands or uplands adjacent to said beach" for the purpose of creating and maintaining a state reservation. (Chapter 647 of the Acts of 1958)
1962	Following initial acquisitions and associated litigation, the Massachusetts Legislature provides for the "reconveyance by the Commonwealth to the original owners of certain lands comprising South Cape Beach." (Chapter 635 of the Acts of 1962)
1971	The Department of Natural Resources is authorized to acquire "South Cape Beach...and such adjacent land and water as it deems necessary...for the purpose of outdoor recreation and conservation; Mashpee municipal lands are specifically excluded. (Chapter 1058 of the Acts of 1971). This Act is modified in 1976 to require the town of Mashpee Select Board approval of all acquisitions. (Chapter 283 of the Acts of 1976)
1976	Legislature authorizes \$1,500,000 for land and water acquisition in Mashpee for the "development, redevelopment, construction, and improvement of outdoor recreation and conservation areas." This authorization is modified in 1982 to scale back the level of proposed development. (Chapter 481 of the Acts of 1976, Chapter 287 of the Acts of 1982). Funding from the federal Land and Water Conservation Fund supplement state acquisition funds.
1980	The town of Mashpee and DEM enter into an agreement regarding the acquisition and operation of South Cape Beach; it is amended in 1981. The amended agreement remains the primary park guidance document.
1982	South Cape Beach is acquired through eminent domain. (Chapter 287 of the Acts of 1982)
1989	A draft Environmental Impact Report, proposing the development of beach facilities, is released in January. A Final EIR, containing less intensive development, is issued in September, 1990.
2003	Abigail's Brook property acquired.
2006	Transfer of a portion of South Cape Beach to the town of Mashpee "solely for conservation and recreation purposes" is authorized by the Massachusetts Legislature. (Chapter 229 of the Acts of 2006)

Table 4.3.2. Cultural resources of South Cape Beach and Abigail's Brook.

Location and Resource	Type ^a	Date ^b	Condition ^c	Integrity ^d	In Use ^e	Utilities ^f	MHC # ^g	Guidance ^h
Sage Lot Pond								
Shipwreck	AR	-	6	L	-	-	-	1

- a. Resource types include the following: AR = Archaeological; BU = Building; LA = Landscape; MHCA – Massachusetts Historic Commission Area; NRHD = National Register Historic District; OB = Object; and ST = Structure.
- b. Date of construction provided, when known.
- c. Building system and equipment condition codes as used in the Massachusetts Capital Asset Management Information System (CAMIS): 1 = Excellent-easily restorable to like new condition; 2 = Good-routine maintenance required; 3 = Adequate-some corrective and preventative maintenance required; 4 = Fair-excessive corrective maintenance and repair required; 5 = Poor-renovation needed; and 6 = Fail.
- d. Integrity is a relative assessment of the condition of a resource's retention of its historic character-defining features; H = High; L = Low; M = Medium; and U = Unknown.
- e. Use categories include: N = building is not in use; S = building is used on a seasonal basis; and Y = building is used year-round.
- f. The following codes are used to identify utilities associated with buildings: E = Electric, H = Heat; I = Internet; S = Septic system; T = Telephone; W = Water; and W(S) = Water is available on a seasonal basis. This information is included for all buildings.
- g. Massachusetts Historical Commission inventory number.
- h. The following guidance is offered for the ongoing maintenance of these cultural resources:
1. Refer to Archaeological Features BMP (DCR n.d.k).

4.4. RECREATION RESOURCES

South Cape Beach is best known for its saltwater beach on the shores of Nantucket Sound. The park's official beach and associated recreation resources are located at the end of McGregor Road. Picnic tables and grills, and the changing station are located near the parking lot; portable toilets are present on a seasonal basis. A boardwalk extends from the changing station to a viewing platform overlooking the beach. A beach wheelchair is available for access to the surf.

Although the park is open year-round, beach access and staffing vary seasonally. Beach facilities are open from mid-April through mid-October, with life guards present from the last week of June through mid-August. At this time, a day use fee is required to park in the main lot. Summer access to the Mashpee Town beach, which is also staffed and guarded, is restricted to vehicles with a Mashpee resident sticker, Mashpee Wampanoag tribal sticker, weekly or monthly pass, or those with tribal IDs.

Water quality is tested weekly during active beach season (i.e., when guarded). Water quality data applies to both the DCR beach and the adjacent Mashpee Town Beach. The last closure due to exceedance of *Enterococcus* bacterial standards was in July of 2007.

There is an unofficial, unguarded beach in the park. Callies Beach is located off of Wills Work Road, on the eastern shore of Waquoit Bay. From June through August the Barnstable County Department of Health and Environment monitors water quality on a monthly basis. Water quality data from June 2003 to July 2014 indicate no recorded exceedances of *Enterococcus* bacterial standards. However, the infrequent sampling at the beach may not capture periods of temporary exceedance.

Hunting occurs in the fall and winter; the exact schedule varies annually and is determined by regulations promulgated by MassWildlife. Pheasant and rabbit are the most popular game species. Deer and waterfowl are also hunted.

Other recreation activities, such as hiking, dog walking, fishing, wind surfing, and kite boarding occur year-round.

The following recreation activities are known to occur at South Cape Beach.

- Dog walking
- Fishing (saltwater)
- Golf (New Seabury Country Club has portion of course on park, as per deed.)
- Hiking/walking
- Horseback riding
- Hunting
- Kayaking
- Kite boarding
- Mountain biking
- Nature study
- Picnicking (4 accessible grills)
- Sun bathing
- Swimming (salt water only)
- Wind surfing

Some of these activities take place along the eastern shores of Waquoit Bay and Great River at the end of Wills Work Road. Kite boarding, night fishing, and kayaking commonly take place here. Access is through a residential neighborhood and does not require passing through the main park entrance or paying a fee.



Entrance to Wills Work Road (left, back of photo), which provides access to the eastern shore of Waquoit Bay. Ornamental plantings and a residence from local neighborhood are visible at right. (See Appendix G for photo information.)

Table 4.5.1. Non-historic buildings and structures of South Cape Beach and Abigail's Brook.

Infrastructure	Date ^a	Condition ^b	In Use ^c	Utilities ^d
Culvert under McGregor Road (150 x 3 feet)	2007	2	Y	-
Garage/storage building	-	2	Y	-
Changing station	2012	1	Y	-
Boardwalk – Main beach	c. 2011	2	Y	-
Accessible viewing platform	c. 2011	2	Y	-
Bayberry Parking Area, fenced-in storage yard; 120 foot by 34 foot	-	3	Y	-
Bridge – Great Oak Road, over creek to Sage Lot Pond	2008	2	Y	-
Boardwalk – Dead Neck crossover	-	3	Y	-

- a. Building system and equipment condition codes as used in the Massachusetts Capital Asset Management Information System (CAMIS): 1 = Excellent-easily restorable to like new condition; 2 = Good-routine maintenance required; 3 = Adequate-some corrective and preventative maintenance required; 4 = Fair-excessive corrective maintenance and repair required; 5 = Poor-renovation needed; and 6 = Fail.
- b. Date of construction provided, when known.
- c. Use categories include: N = building is not in use; S = building is used on a seasonal basis; and Y = building is used year-round.
- d. The following codes are used to identify utilities associated with buildings: E = Electric; H = Heat; I = Internet; S = Septic system; T = Telephone; W = Water; and W(S) = Water is available on a seasonal basis. This information is included for all buildings.

4.5. INFRASTRUCTURE

Most of the park's infrastructure is in support of getting visitors in automobiles to the beach; providing them a place to park once there; and getting them from the parking lot, over the dunes, to the shore. There are few buildings and structures. (See Table 4.5.1)

Property Boundary

The park is bounded on the west by Waquoit Bay and Great River, on the south by Nantucket Sound, on the east by New Seabury, and on the north by a combination of Great River, private residences along Whippoorwill Circle, and Great Oak Road. The north and east boundaries do not bear conspicuous markers.

The town of Mashpee holds a conservation restriction on approximately 29.49 acres near the park's boundary with New Seabury.

The Abigail's Brook parcel is bounded on the south by Abigail's Brook and on the west, north, and east by Mashpee National Wildlife Refuge. The boundaries of the refuge are posted.

Buildings and Structures

There are only two buildings, a garage/storage building and a four-room changing station. (Table 4.5.1)



Garage/storage building at South Cape Beach, the park's largest building. (See Appendix G for photo information.)

Two boardwalks provide beach access. The first is located between the parking area and the beach; it has an accessible viewing platform with benches overlooking the ocean. The second boardwalk (i.e., the Dead Neck crossover) is located at the southern end of Great Oak Road. A foot path from the Mashpee Town Beach's parking lot also connects to this boardwalk.

A third boardwalk, constructed of metal grates, extends into the marshes in the southeast corner of Sage Lot Pond. This temporary boardwalk, which is scheduled to be removed in 2015, provides access to equipment associated with scientific research in the Reserve. It is not open to the general public.



Temporary research boardwalk in saltmarsh at South Cape Beach. (See Appendix G for photo information.)

Roads

There are three park roads: Great Oak Road, McGregor Road, and Wills Work Road. Great Oak Road is the park's main access road. It runs from the park's entrance to the Dead Neck Trail. It is paved for 0.7 miles, and gravel for an additional 0.1 miles. McGregor Road runs 0.4 miles from Great Oak Road to the park's main lot; it is open to the public on a seasonal basis. The third road, Wills Work Road, provides access to the eastern shore of Waquoit Bay. This 0.9 mile long gravel road originates on Manitoba Road in a residential neighborhood west of the park entrance.

The access road to the Mashpee Town Beach originates at the end of the paved portion of Great Oak Road.

Table 4.5.2. Condition and length of roads at South Cape Beach.^a

Road Condition	Paved (Miles)	Unpaved (Miles)
Good	1.00	0.26
Fair	0.00	0.30
Poor	0.00	0.00
Total	1.00	0.56

a. Based on field assessment; all distances calculated using GIS.

Parking

There are two DCR parking lots off Great Oak Road, the Main Lot adjacent to the beach and the Bayberry lot on Great Oak Road. (Table 4.5.3). Only the HP spaces and access aisles in the main lot are paved, the remainder of the lot and all of the Bayberry Lot are gravel. The main lot is open seasonally; the

Bayberry Lot is available year-round. Most off-season parking takes place in the Mashpee town beach's lot due to its paved surface, ocean views, and year-round maintenance.

Table 4.5.3. Number of public parking spaces, by location and type, at South Cape Beach.

Location	HP	Other	Total
Main Lot – East ^{a, b}	6	86	92
Main Lot – West ^{a, b}	0	132	132
Bayberry Lot ^a	0	28	28
Wills Work Road – Great River ^a	0	4	4
Wills Work Road – Pull off ^a	0	2	2
Wills Work Road – End Lot ^a	0	9	9
Total	6	261	267

a. Number of spaces is based on the number of potential 9-foot-wide spaces.

b. Number of HP spaces base on pavement markings.

Several aspects of the HP parking in the Main Lot do not meet current Architectural Access Board requirements. There are currently six 80-inch-wide spaces separated by 50-inch-wide access aisles. Current standards require a minimum of seven 96-inch-wide spaces with 60-inch wide access aisles. A 96-inch-wide access aisle is required for van accessible spaces.



Some of the designated HP parking at Main Lot-East. (See Appendix G for photo information.)

Bicycle parking is provided at the main parking lot (16 space) and adjacent to the Dead Neck Crossover boardwalk (5 spaces).

There are three parking areas along Wills Work Road (Table 4.5.3); all have sand surfaces. The first is a small lot near where Great River enters Waquoit Bay. The second is a small pull-off on the east shoulder of the road. The third lot provides roadside parking at the southern end of Wills Work Road.

Only the first lot appears to have been formally developed for parking. When these areas are full, visitors park cars along the road shoulder.

Trails

There are two formal trails. The first, the Great Flat Pond Trail includes a nested loop that provides scenic views of both Sage Lot Pond and Great Flat Pond. A trail spur connects this loop with Great Oak Road to the east of the park's entrance. The second trail is the Dead Neck Trail; it extends from the Mashpee town beach westward to the channel into Waquoit Bay. Both trails have informative and interpretive signs. The condition of these trails is identified in Table 4.5.4.

Table 4.5.4. Condition and length of official trails at South Cape Beach.

Trail Condition	Length (Miles)
Good	2.84
Fair	1.01
Poor	0.82
Total	4.67

Kiosks and Signs

There are two kiosks. The first is located along Great Oak Road near the park entrance, and the second is located between the picnic area and changing station. Both have maps of the park and Reserve, and announcements regarding visitor safety and park programs. They use the Reserve's color scheme of gray wooden structures with pale green panels.

Informational and interpretive signs are located at the park entrance, parking lot entrance, and trail heads. The park's main identification sign is a modified version of DCR's standard main identification sign, but in the Reserve's color scheme. This palette is also used on the park's internal park information signs.

There are no signs acknowledging the role of the Land and Water Conservation Funds in the acquisition of this property.



Kiosk, with interpretive panel, located at the entrance to South Cape Beach. This color scheme is used at all Reserve properties. (See Appendix G for photo information.)

Iron Ranger

An iron ranger is located between the picnic area and the changing station.

Memorials and Markers

An ornamental stone with a metal commemorative plaque is located between the picnic area and the changing station. It lists the names of DCR commissioners, elected officials, and South Cape Beach Advisory Board members that assisted in creating the park.

4.6. INTERPRETATION

The National Estuarine Research Reserve System's mission is "To practice and promote stewardship of coasts and estuaries through innovative research, education, and training using a place-based system of protected areas" (NOAAA 2011). Emphasis is placed on increasing environmental literacy through education and training. As a result, extensive formal and informal interpretive and educational programs are offered throughout the Reserve, including the following programs at South Cape Beach:

- Teachers on the Estuary (TOTE)
- Coastal Bird Walk
- Creature Feature, including: Crabbie Critters, In a Shell, and Is That a Fish?
- Field Walks
- Science by the Sea, including: Changing Coastlines, Salt Marsh Secrets, and Wildlife Walk
- Sunset Beach Stroll
- Trail Adventures, including Cranberry Chronicles, Marsh Madness, Tidal Treasure Hunt, and Wetland Wonders

Additional information on programming at South Cape Beach and throughout the Reserve is provided in WBNERR (2014).

The following interpretive panels are located at the Dead Neck Trail trailhead:

- Please Help Protect the Dunes
- Caution: Threatened Birds Ahead

These are standard panels used in similar contexts throughout the Complex. Additional interpretive panels are planned for 2015.

4.7. MANAGEMENT RESOURCES

Staffing

DCR Personnel

All South Cape Beach staffing is seasonal. (Figure 4.7.1) With the exception of lifeguards, all South Cape Beach staff may work at any of the Reserve's four properties. However, due to the high levels of use at South Cape Beach, seasonal staff members spend most of their time at this park.

Seasonal employees are managed by a combination of other seasonal personnel and year-round personnel from WBNERR. The Summer Worker, Recreation Facility Repairer, and Laborer positions report to the Seasonal Forest and Park Supervisor I, who reports to the year-round Forest and Park Supervisor II at WBNERR.

All Lifeguard I positions report to the Lifeguard II position, who in turn reports to both the on-site Forest and Park Supervisor I and the Regional Waterfront Coordinator.

Park Interpreters report to the School and Interpretive Program Coordinator at WBNERR.

Table 4.7.1. Mass Parks personnel assigned to South Cape Beach; current and past.

Job Title	Number of Positions	Number of Positions
	2014	2005
<i>Seasonal Personnel</i>		
Endangered Species Monitor	0	1
Laborer I (Short-term)	1	
Lifeguard I (Short-term)	4	3
Lifeguard II (Short-term)	1	1
Summer Worker	1	5

Three positions administratively located at South Cape Beach are based in a different park. Three Forest and Park Supervisor I positions serve as Island Managers at Washburn Island; they are not addressed in this section. Additional information on these positions is included in *Section 5. Washburn Island*.

Partnerships and Volunteers

The Waquoit Bay Reserve Foundation was established to support the Reserve through fundraising and volunteerism. Their activities cover all four parks within the Reserve, including South Cape Beach. (See Section 3.7 for additional information on the WBRF.)

Public Safety

The Mashpee Fire and Police departments provide fire response, emergency services, and law enforcement. The Police Department also locks the gate to Wills Work Road in the evening.

Funding

Conservation Trust Fund

There are no funds in the Conservation Trust Fund dedicated to South Cape Beach.

Retained Revenue

The 2014 beach season generated \$48,464 in revenue from entrance fees. This includes 6,132 day use tickets, 145 resident season passes, seven non-resident season passes, and 10 second car passes.

Other Revenues

In 2014 the WBRF began selling light snacks from the garage/storage building. They recently donated portable speed bumps to slow traffic at the entrance to South Cape Beach.

The 2014 environmental bond bill included \$500,000 for the realignment of Wills Work Road, so that it is accessed from Great Oak Road within the park, rather than from the Quail Hollow Village residential neighborhood.

4.8. MANAGEMENT PRACTICES

Management of DCR properties is guided by a variety of regulations, policies, BMPs legal agreements, and institutional knowledge. An agreement between the DEM and the town of Mashpee, specific to South Cape Beach, heavily influences park operations. This and other legal agreements unique to the park are presented in Table 4.8.1.

Table 4.8.1. Key legal agreements for South Cape Beach and Abigail's Brook.

Party and Subject of Agreement	Type ^a	Expiration Date ^b
Town of Mashpee Deposition of 2,500 CY of dredge spoil in South Cape Beach.	U	2012
Waquoit Bay Reserve Foundation Support for mission of WBNERR	A	2018
Town of Mashpee Amended agreement	A	2080
National Oceanic and Atmospheric Administration State and federal roles in management of WBNERR	U	None
U.S. Fish and Wildlife Service Establishing a formal basis for cooperation and coordination for matters pertaining to the Mashpee NWR.	U	None

- a. Agreement types include: A=Memorandum of Agreement; and U=Memorandum of Understanding.
- b. Year that agreement expires. Permanent agreements are indicated by an expiration date of "None."

Key management and guidance documents are presented in Table 4.8.2.

Table 4.8.2. Key management and guidance documents for South Cape Beach and Abigail's Brook.

Author and Document	Year
Albert Veri and Associates, Inc. Environmental Impact Report; Final. South Cape Beach State Park, Mashpee, Massachusetts.	1990
Massachusetts Department of Environmental Management Waquoit Bay National Estuarine Research Reserve, South Cape Beach Recreation Area, Management Plan.	1995 ^a
Gannet Fleming, Inc. Environmental Audit Report: South Cape Beach State Park, Mashpee, Massachusetts.	1998 ^c
National Park Service Land and Water Conservation Fund State Assistance Program. Federal Financial Assistance Manual.	2008
Louis Berger Group, Inc. Waquoit Bay stream restoration master plan; Falmouth and Mashpee, Massachusetts.	2010
Waquoit Bay National Estuarine Research Reserve Emergency operations plan for the Waquoit Bay National Estuarine Research Reserve	2012
Waquoit Bay National Estuarine Research Reserve Hurricane preparedness and response plan for the Waquoit Bay National Estuarine Research Reserve. 2013.	2013
Waquoit Bay National Estuarine Research Reserve Waquoit Bay National Estuarine Research Reserve; Management Plan; 2013-2017. Supporting Coastal Communities through science.	2014

The 2014 Management Plan (WBNERR 2014) covers all properties in the Reserve, and addresses Reserve research, educations program, and staffing in detail. It does so from the perspective of the National Estuarine Research Reserve System. This plan is updated every five years, per NOAA requirements.

Advisory Committees

The following committees provide input on matters of policy and operations of the Reserve, including South Cape Beach:

- South Cape Beach Advisory Committee
- Waquoit Bay National Estuarine Research Reserve Advisory Committee

The South Cape Beach Advisory Committee was established by the amended agreement between the DEM and the town of Mashpee. It is “responsible for making recommendations to the Department on such matters to include, but not limited to, park management and operations, rules and regulations, design and plan review.” The Committee has the following 11 voting members:

- Residents of, or representatives for, the town of Mashpee (8).
- Resident of, or representative for, the town of Sandwich (1).
- Resident of, or representative for, the town of Falmouth (1).
- Resident of, or representative for, the town of Barnstable (1).

It also has the following four non-voting, ex-officio members.

- Representatives of the Office of Coastal Zone Management (1).
- Representative of the Department of Fisheries, Wildlife and Recreational Vehicles (1).
- State Representative, Third Barnstable District.
- State Senator, Cape and Islands District.

There is no tribal representation on this committee.

Additional information on the Waquoit Bay National Estuarine Research Reserve Advisory Committee maybe found in WBNERR (2014)

Research Activities

The Reserve has a formal registration procedure for research activities; it is administered by the Research Coordinator. See Section 3.8 for additional information.

Annual Maintenance

Ongoing management practices typically follow a regular schedule. Common activities, and the desired frequency with which they occur, are identified in Table 4.8.3.

Table 4.8.3. Annual cycle of management activities at South Cape Beach.

Activity	Spring ^a	Summer ^a	Fall ^a	Winter ^a
Cleaning - Walkways	AN	D1/AN	N/A	N/A
Litter removal - Beaches, parking lots, walkways	AN	D1/AN	N/A	N/A
Litter removal - Trails	AN	AN	N/A	N/A
Maintenance - Picnic sites, fences, etc.	AN	AN	AN	N/A
Mowing and trimming	E7/AN	E7/AN	AN	N/A
Mulching and fertilizing	N/A	N/A	N/A	N/A
Pruning - Trees and shrubs	AN	AN	AN	AN

a. Frequency codes are: A1 = Once annually; AN = As needed; D = Daily, # times; E = Every # days; N/A = Not applicable.

Natural Resources

Water Resources

Pedestrian access over the dunes is restricted to minimize damage. At two locations, the path from the main parking lot to the beach and at the Dead Neck Crossover, access is provided via boardwalks atop, or elevated above, the dunes. The pathway through the dunes in barrier beach Ms-4 is via a clearly demarcated pedestrian corridor that winds across, rather than straight through, the dunes so as to avoid creating a direct channel. The path between the Mashpee Town Beach and the Dead Neck Crossover also has a pedestrian corridor. Most of the dunes between the Dead Neck Crossover and the channel into Waquoit Bay have unregulated access, with numerous foot paths through the dunes.



Pedestrian corridor through dunes near Flat Pond. (See Appendix G for photo information.)

There is no barrier beach management plan.

The Cape Cod Mosquito Control Project maintains the flow of water from Flat Pond, through the salt marsh, to Sage Lot Pond by removing obstructions from the drainage system (Sakolsky 2008).

A 2007-2012 MOU between the DCR Division of Waterways and town of Mashpee allowed the Town to deposit dredge spoils along the eastern shore of Waquoit Bay, south of Callie's Beach. This location was selected without input from Reserve staff. Sediment deposition at this location may close the entrance to Sage Lot Pond, alter pond ecology, and nullify long-term monitoring stations in the associated marsh.

Rare Species

Populations of beach-nesting birds are managed and monitored by the Massachusetts Audubon Society under a statewide contract, in accordance with state and federal standards. This includes searching for nests, working with DCR to close portions of the beach and dunes critical to shorebird protection, installing symbolic fencing and educational signs, educating park visitors, monitoring nesting and fledging success, and removing signs and symbolic fencing at the end of the nesting season.

Dogs are seasonally restricted from the beach and dunes west of the Dead Neck Crossover between April 1 and September 30 in order to protect migratory and nesting shorebirds.

Invasive Species

There is no invasive species monitoring or management at this park..

Vegetation

Lawns are cut in accordance with the annual work cycle. (Table 4.8.3) Mowing takes place at the park entrance, along roadsides, and at the picnic area.

No fertilizers are used at this park.

Cape Cod Mosquito Control Project maintains access paths along drainage ditches by cutting back vegetation (Sakolsky 2008).

Wildlife

MassWildlife annually stocks pheasant along Wills Work Road.

Cultural Resources

There are no management activities unique to this park.

Recreation Resources

Lifeguard chairs are transported to the fenced-in storage yard at the Bayberry Lot and secured at the end of the beach season. They are returned to the beach the following June. Picnic tables remain outdoors at the picnic area year-round; cooking grills are permanently mounted.

The 1981 amended agreement between the DEM and the town of Mashpee includes provisions for the use of "designated service roads for the sole purpose of fishing access" for:

- Persons over 60 years of age
- Those suffering from ambulatory disabilities
- Those holding disabled veteran status.

Under this agreement, nighttime access was to be provided under a permit system, for a maximum of six vehicles at any one time. There are no designated service roads and no permit system.

The deed to that portion of the park acquired from the New Seabury Great Flat Pond Nominee Trust (Document #642521) reserved the grantor (i.e., the Trust) a tee easement and a rough easement with the reserved right to install utilities and to "occasionally cut brush in connection with its use as a rough." As

a result, portions of the Country Club at New Seabury are on the state park.

Infrastructure

The 1981 amended agreement between the DEM and the town of Mashpee included a provision that the Department would support the transfer of a 10 acre parcel along Wills Work Road to the Town, for use as a “boat launch/pier facility” on Great River. Chapter 229 of the Acts of 2006 authorized the disposition of this property, specifying that it should be used “solely for conservation and recreation purposes, passive recreation purposes only, with shoreline access limited to non-motorized boats and canoes, and open to the general public without restriction or discrimination.” Access is to be from Wills Work Road “during the normal operating hours for South Cape Beach State Park.” The status of this 10 acre parcel is unclear.

The town of Mashpee’s conservation restriction on a portion of the park near New Seabury (Figure 4.1) specifies activities prohibited and allowed. Among those activities specifically allowed are: the placing of fences, construction of wildlife viewing platforms and osprey nesting platforms; selective cutting for public safety and trail purposes; and the erection, maintenance, and replacement of signs, including interpretive displays.

Buildings

The garage/storage building and changing station’s doors are covered with plywood and secured for the winter (i.e., October through April).



Changing stations secured for winter. (See Appendix G for photo information.)

Roads

McGregor Road is closed to the public from mid-October through mid-April; it is not plowed during the winter. The town of Mashpee performs the snow plowing on Great Oak Road, within the park in order to provide year-round access to the Mashpee Town Beach.

In the summer of 2014 the DCR added fill materials to, and graded, Wills Work Road.

The deed to that portion of the park acquired from the New Seabury Great Flat Pond Nominee Trust (Document #642521) provides DCR the right to “use Walton Heath Way, Fairway Lane, and Mid-Iron Way...for management and maintenance purposes and not for public access.” In addition, the DCR has the deeded right to “use once a year, more or less...the carpath from Mid-Iron Way...for emergency management purposes.” Use requires coordination with the golf course management, and terminates when DCR “constructs an internal pathway adequate to accommodate vehicle traffic.”

Parking Areas

The main parking lot is closed to the public from mid-October through mid-April.

The amended agreement between the DEM and the town of Mashpee limits the number of parking spaces in the park to no more than 400 vehicles.

Trails

Trails are maintained by the WBNERR Stewardship Coordinator with the assistance of volunteers, as needed and as time and resources permit.

Kiosks and Signs

Park employees are responsible for updating the content of kiosk’s bulletin board.

4.9. RECOMMENDATIONS

Introduction

This section provides recommendations for the near- and long-term management of South Cape Beach. Applied Land Stewardship Zoning recommendations provide general guidance for managing South Cape Beach. Future activities and projects should be checked against the zoning map (Figure 4.2) for consistency. Management recommendations are all

high-priority, and should be addressed as soon as resources become available.

Applied Land Stewardship Zoning (Figure 4.2)

The following Land Stewardship Zoning is recommended for South Cape Beach State Park.

Zone 1

The following sections of South Cape Beach have been designated Zone 1.

- Barrier beaches Ms-4 and Ms-5.
- All salt marsh.

Zone 2

All upland areas not on barrier beaches are designated Zone 2.

Zone 3

The following portions of South Cape Beach are currently developed, appropriate for potential future development, or intensively used for recreation.

- The beach, from the foredune to the low tide line. This area is intensively used for swimming and sunbathing, fishing and fishing access, and launching and landing kite boards.
- Bayberry Lot and storage yard.
- Main lot, picnic area, and adjacent changing station area.
- A 100-foot buffer to either side of Great Oak Road, from the park entrance to a point 500 feet into the park. A portion of this area may be used for a future relocation of the entrance to Wills Work Road, the construction of a contact station, and the reconfiguration of the park entrance.

Significant Feature Overlay

The following Significant Feature Overlay was developed to protect state and federally listed beach-nesting birds.

- ***Rare Shorebird Significance Overlay, with NHESP management guidelines.*** This overlay covers piping plover nesting and foraging areas, and common and least tern nesting areas. Beach and dune closures within this overlay area may occur as needed and may expand or contract over time.

Management Recommendations

Nine priority management recommendations were developed for South Cape Beach State Park, all are of equal importance. (Table 4.9.1) For a recommendation to be considered priority it must address one or more of the following criteria:

- Regulatory compliance or compliance with legal agreements.
- Threats to the health and safety of park visitors and employees.
- The imminent loss of a natural, cultural, or recreation resource.

Additional maintenance and management needs observed during the preparation of this RMP, but not meeting one or more of the above criteria, are not included in this plan.

All recommendations are of equal priority.

South Cape Beach State Park

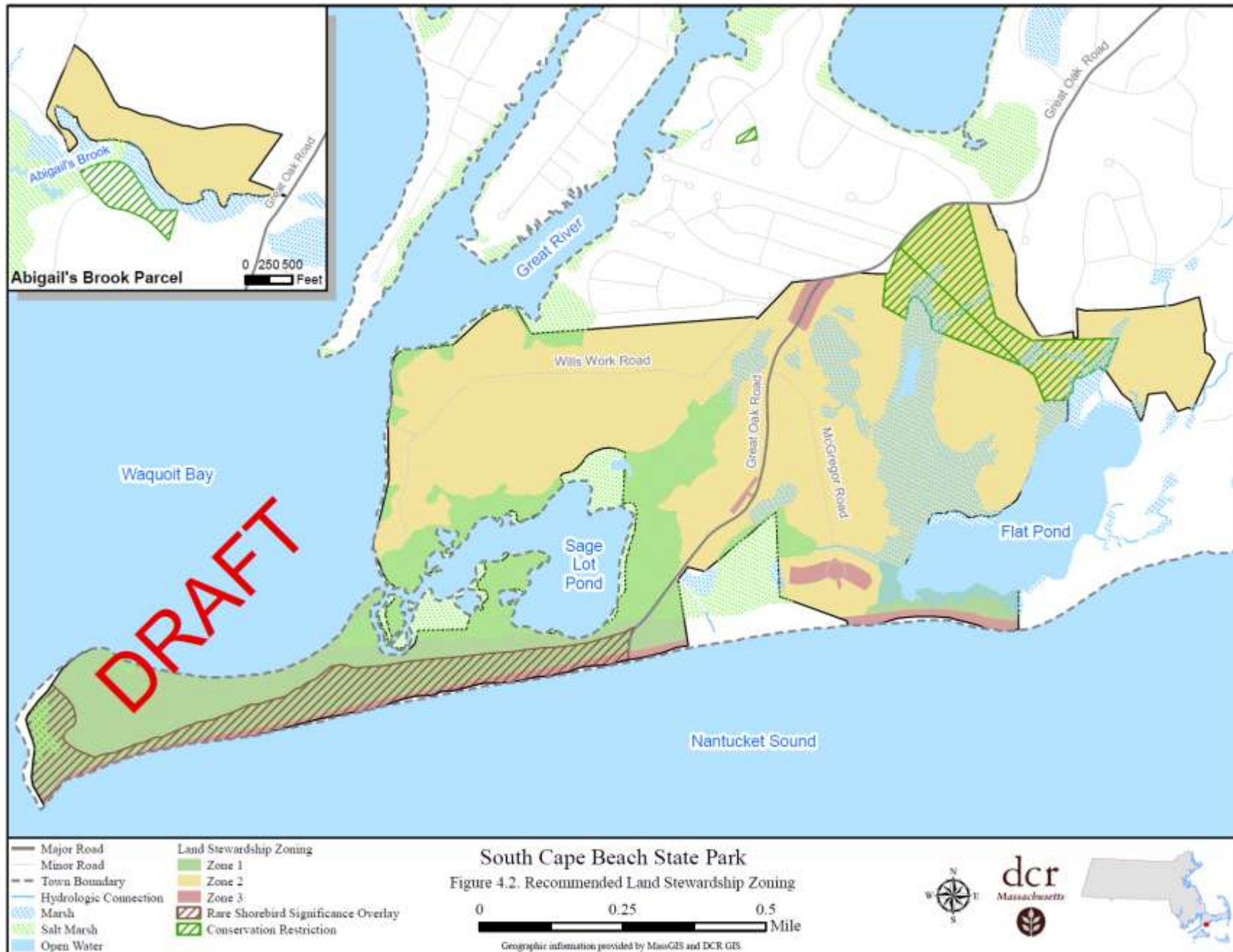


Table 4.9.1. Priority recommendations for South Cape Beach and Abigail's Brook.

Recommendation	Implementation^a
Continue ongoing rare shorebird monitoring and management activities.	P, R
Update HP parking in the Main Lot to increase the number of spaces to seven, and increase space and access aisle widths to current standards.	C, R, U
Reconfigure the entrance to Wills Work Road to remove it from the residential neighborhood and connect it to Great Oak Road near the park's entrance gate.	E, P, R, V
Install standard Land and Water Conservation Fund signs at kiosks.	R
Request that the town of Mashpee permanently dedicate at least one of its eight seats on the South Cape Beach Advisory Committee to a representative of the Mashpee Wampanoag Tribe.	R
Prevent pedestrians from crossing dunes between the Dead Neck Crossover and the entrance to Waquoit Bay, by creating pedestrian corridors, similar to those used elsewhere in the park.	P, R
Improve coordination between DCR Division of Waterways, WBNERR staff, and the town of Mashpee in future agreements governing the placement of dredge spoils at South Cape Beach.	O, R, V
Prepare a barrier-beach management plan.	P, R
Clarify the status of the 10 acre Wills Work Road parcel, and continue working with the town of Mashpee to create a non-motorized boat and canoe launch area at this site.	L, P, R

- a. The following codes identify the party or parties responsible for implementing the recommendations: B = Bureau of Ranger Services; C = Contractor; E = Division of Engineering; F = Bureau of Forest Fire Control and Forestry; L = Legal Services; O = Other; P = Bureau of Planning and Resource Protection; R = Regional and district staff; U = Universal Access Program; V = Volunteer or partner; and X = Office of External Affairs and Partnerships.

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